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ART. 21. ADDITIONAL SCOLECODONTS FROM THE POTTER
FARM FORMATION OF THE DEVONIAN OF MICHIGAN

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INTRODUCTION

A number of years ago a small fauna of scolecodonts, fossil polychaete jaws, collected by Dr. G. Arthur Copper of the United States National Museum, were studied and the results published (Eller, 1938). From fragments and the type of jaws found it was evident that only a small portion of the fauna was originally described. Subsequent collecting has proved that the formation is extremely rich in scolecodonts. A hand specimen of the limestone, when dissolved in a weak acid solution, will produce scores of jaws, and many in a very fine state of preservation. Even if one jaw in 25 was considered as representing an individual the annelids would far outnumber any other type of invertebrates preserved in the rock. Their presence in such numbers must have been a considerable factor in the competition for food and a living space. The sea bottom was continually being disturbed and reworked by their burrows, a situation that could not be very desirable for the physical comfort of the diverse fauna and flora that wanted to occupy the same area.

Most of the specimens found were single jaws. There were perhaps a hundred specimens, however, consisting of two jaws in articulation. Workers or students only slightly familiar with this field often view with alarm the fact that a single jaw from the complex jaw apparatus is figured generically and specifically. This is especially true of those who chance on an articulated specimen. All workers that have given any serious thought to the subject state in their publications that they are obliged to describe the jaws separately and realize that they do not belong to different species. Again it is well to quote Hinde (1880) where he restated that in the classification he was "thoroughly conscious of its tentative character, as serving for paleontological reference rather than as presenting exact zoological arrangement."

The Potter Farm formation is probably Tully in age. It has not been correlated very extensively but it contains faunal elements related to those of the Cedar Valley formation of Iowa and the Thunder Bay formation. The specimens were all collected from the ledges by the side of the road about a quarter of a mile south of Four Mile Dam, Alpena County, Michigan.

DESCRIPTION OF SPECIES

Genus ARABELLITES Hinde, 1879

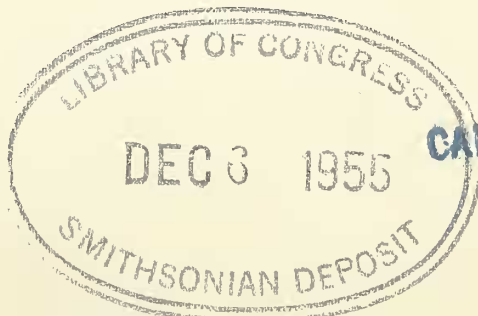
Arabellites arrectus, sp. nov.

Maxilla I. Plate 22, Fig. 1-2

The jaw is elongate and the figured specimen measures about 1.53 mm. in length. A series of seven conical, backward directed denticles is located on a narrow, elevated ridge which is nearly parallel to the inner margin. The area adjacent to the denticles is concave. The first denticle is small

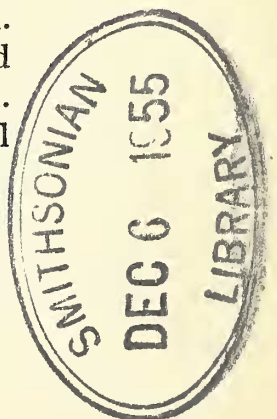
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Issued November 4, 1955.



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and it is followed by denticles that increase in size to about the middle where they again decrease to the posterior end. About one-half of the jaw consists of a heavy erect fang. The outer margin is notched and incurved slightly at the end of the fang to form a small shank. The inner margin is curved and its margin rounded. The posterior extremity is obliquely truncate. A large, wide fossa occupies most of the upper surface of the jaw. It is deep along the inner margin but becomes shallow at the outer margin where the area is convex.

Hinde (1882) described a species, *Arabellites contractus*, which resembles *Arabellites arrectus* except for the length and curvature of the fang and the character of the denticles. *Arabellites hamiltonensis* Stauffer (1939) is similar to *Arabellites arrectus* in a general way. They differ in the outline of the outer margin and the shape and arrangement of the denticles.

Genus NEREIDAVUS Grinnel, 1877

Nereidavus angulatus (Eller)

Maxilla I. Plate 22, Fig. 3-4

Eunicites angulatus Eller 1938. Annals of the Carnegie Museum, v. 27, p. 278, plate 28, Fig. 15.

The posterior portion, especially the fossa of *Eunicites angulatus* Eller (1938), is similar to that found in many left jaws of *Nereidavus*. The lack of denticles was the reason for the form being originally placed in the genus *Eunicites*. Since the original description a number of species of *Nereidavus* have been described from various horizons, Eller (1940, 1941, 1942, 1945), that are similar to *Eunicites angulatus*. Some of these jaws have a series of small sharp-pointed denticles, some only a few minute, blunt teeth scattered along the margin, while other specimens have none at all. Denticles have not been found on the inner margin of *Eunicites angulatus*. The species is being placed in the genus *Nereidavus* because of the posterior structures and since some forms of the genus lack denticles.

Nereidavus? admixtus sp. nov.

Maxilla I. Plate 27, Fig. 2

The jaw is small, elongate, and the figured specimen measures 0.44 mm. in length. A series of 10 conical, sharp-pointed denticles extends nearly to the posterior end. The first denticle is slightly larger than the other teeth. The second denticle is small and the remaining ones are nearly uniform in size. The first two or three denticles point forward while the posterior five or six are directed backwards. The outer margin is nearly straight and then curves abruptly to form a truncate shank that is thickened along the posterior margin. The lateral margins of the shank are incurved and the surface is irregular.

The lack of a fossa makes this form different and not simple to place generically. The truncate shank with the thickened posterior margin suggests a surface of articulation with a carrier. This is typical of a number of modern genera including *Arabella*, *Leodice* and *Drilonereis*. There is a similarity between *Arabellites clarkii* Eller, 1934 and *Nereidavus? admixtus*.

Genus *ILDRAITES* Eller, 1936*Ildraites appressus* sp. nov.

Maxilla II. Plate 27, Fig. 1

The jaw is wide and subtriangular in outline. The figured specimen measures 0.72 mm. in length and 0.35 mm. in width. On the curved inner margin a series of 16 conical, sharp to blunt denticles extends nearly to the posterior end. The fang is large, narrow, sharp-pointed and directed slightly forward. The next seven denticles are small and needle-like, and decrease in size posteriorly. These are followed by eight larger, blunt, pressed together, backward directed denticles that increase in size to about the middle and then gradually decrease in size to the posterior end. On the curved outer margin a wide, deep, crescent-shaped bight forms a short, wide shank and a narrow posterior area. A deep fossa occupies part of the upper side of the jaw. The margins of the fossa are slightly thickened and rounded. The upper side of the jaw is highly convex while the under side is flattened.

There is a similarity between *Ildraites appressus* and *Ildraites howelli* Eller (1941) especially in the arrangement of the denticles. They differ in the width of the jaw and the curvature of the outer margin. No attempt will be made to compare *Ildraites appressus* with *Paulinites paranaenses* Lange (1947), maxilla II, right jaw (labeled left in Lange's paper) since it is probably specifically the same as *Ildraites howelli* Eller. Hinde (1882) described a species, *Arabellites anglicus* Hinde, from the Silurian of Gotland, in which the denticles occupy the full length of the inner margin similar to *Ildraites appressus*. They differ mostly in the width of the posterior part of the jaw and the character of the anterior denticles and fang. *Arabellites priscus* Stauffer (1939) resembles *Ildraites appressus* in a general way, but Stauffer's species differs in that it is narrower, has a more shallow bight, a heavier fang, and denticles set at a different angle.

Genus *LEODICITES* Eller, 1940*Leodicites angiformis*, sp. nov.

Maxilla II. Plate 22, Fig. 5-6

The jaw is elongate, subtriangular in shape. The figured specimen measures 0.56 mm. in length. Along the straight inner margin a series of ten, conical, sharp-pointed, backward directed denticles extends the full length of the jaw. The fang is of medium size and is directed backwards nearly perpendicularly to the anterior margin. The second denticle is large and is followed by a very small one. The remaining denticles are large in comparison to the size of the jaw. They decrease only slightly in size to the posterior end. The anterior margin is slightly incurved and forms a small, sharp-pointed shank with the straight outer margin. A deep, narrow fossa extends the full length of the jaw and occupies most of the upper side. The margins of the fossa are thin.

There is a resemblance in the general shape between *Leodicites antifixus* Eller (1945), *Leodicites barbatus* Eller (1942), *Leodicites artus* Eller (1945) and *Leodicites angiformis*.

Leodicites altilis sp. nov.

Maxilla II. Plate 22, Fig. 7-8

The jaw is large, wide, and subtriangular in shape. The figured specimen measures 1.48 mm. in length and 0.86 mm. in width. Along the curved inner margin a series of nine blunt, triangularly shaped denticles extends nearly to the narrow posterior extremity. The denticles are not uniform in size. A small anterior denticle is followed by a larger one. The third denticle is usually the largest and it is followed by smaller denticles of various sizes. All denticles are directed backwards and overlap each other. The anterior margin is rounded from the fang and then becomes straight to the pointed shank. A deep crescent-shaped bight on the outer margin emphasizes the length of the shank. Along the lower half of the bight and mostly on the under surface is a rounded ridge. A triangularly shaped fossa is present on the upper surface of the jaw. A thickened margin with well rounded edges surrounds the fossa. The under surface at the posterior half is slightly concave causing the fossa to be shallow.

Leodicites reimanni Eller (1941) is similar in a general way to *Leodicites altilis*. The arrangement of the denticles and the position of the shanks of the two forms are quite different.

Leodicites abbreviatus sp. nov.

Maxilla II. Plate 22, Fig. 9-11

In outline the jaw is small, subtriangular and rather wide in proportion to its length. The figured specimen measures 0.32 mm. in length and 0.27 mm. in width. A series of eight conical, sharp-pointed denticles extends along the full length of the slightly curved inner margin. The fang is sharp, hooked, and not in alinement with the other denticles. Following the fang the denticles decrease regularly in size to the posterior end and are nearly perpendicular to the under side of the jaw. The outer margin curves from the fang and is notched by a crescent-shaped bight which forms a wide, blunt shank. A wide, shallow fossa occupies most of the upper surface of the jaw. The margins of the fossa are rounded. The surface of the jaw is crossed by a deep depression.

Leodicites abbreviatus is similar to *Leodicites absolutus* Eller (1945). They differ from each other in the number and character of the denticles, the shape of the shank, and the surface features.

Leodicites amplicameratus sp. nov.

Maxilla II. Plate 27, Fig. 3-4

In outline the jaw is subtriangular and elongate. An average specimen measures 1.30 mm. in length. Along the inner margin a series of sharp, triangular-shaped, backward directed denticles extends the full length of the jaw. The first denticle is small and is followed by teeth that become progressively larger to about the middle and then gradually become smaller to the posterior extremity. A small bight is present on the outer margin. It forms with the broadly rounded anterior margin a small, angular shank. The upper side is irregularly convex except for a concave area that extends

obliquely from the anterior end to the shank. A large-chambered, shallow fossa occupies most of the upper side of the jaw.

All specimens of this species were found broken. *Leodicites ampli-cameratus* does not very closely resemble any other species.

***Leodicites ambiguus* sp. nov.**

Maxilla II. Plate 27, Fig. 5-6

The jaw is narrow and elongate. A figured specimen measures 0.78 mm. in length. On the inner margin a series of six conical, sharp-pointed, backward directed denticles extends the full length of the jaw. The first denticle is large and is followed by a small tooth. The remaining denticles become progressively larger posteriorly to the final tooth which is nearly as large as the first denticle. The anterior margin is extended obliquely with the outer margin to form a long, straight-sided, truncate shank. A deep fossa occupies the complete upper side of the jaw including the shank.

The position and shape of the shank and the character of the denticles do not correspond to any other species of the genus. The shank of *Leodicites anticus* Eller (1945) curves forward slightly as in that of *Leodicites ambiguus*.

***Leodicites angusticameratus* sp. nov.**

Maxilla II. Plate 27, Fig. 7.

The jaw is small, subtriangular in outline and the figured specimen measures 0.45 mm. in length. Along the inner margin a series of six or seven conical, sharp-pointed, forward directed denticles extends the full length of the jaw. The first denticle is large and the remaining teeth gradually become smaller posteriorly. The anterior margin curves forward and with the outer margin forms a small, acute shank. The surfaces of the jaw are flattened or slightly convex. A narrow-chambered fossa extends the full length of the jaw including the shank.

This form is similar to *Leodicites streetsvillensis* Eller (1942) and *Leodicites anticus* Eller (1945) except for the size of the shank, arrangement and character of the denticles, and the length of the jaw. There is a slight resemblance in general shape between *Leodicites angusticameratus* and *Leodicites caleyi* Eller (1944).

Genus STAUROCEPHALITES Hinde, 1879

***Staurocephalites aequilateralis* sp. nov.**

Maxilla II. Plate 22, Fig. 12-29

The jaw is narrow, elongate, and nearly as wide at the posterior extremity as at the anterior end. Measurements of the figured specimens range between 0.59 mm. and 0.76 mm. in length. A straight inner margin bears a series of 12 to 14 conical, backward directed denticles which extend nearly to the posterior end. The first eight denticles are large and decrease only slightly in size posteriorly. The remaining four to six denticles are small and also decrease very little in size. The first denticle appears to be a continuation of the margin. The anterior end of the jaw is truncate while the posterior end is rounded. A fossa occupies the complete upper side of the jaw. The upper margin of the fossa is rounded while the under margin is thin and

often broken. On the upper surface of some specimens, and parallel to the described denticles, is a small jaw or group of minute teeth extending nearly the full length of the jaw. The second row of denticles may be a part of a separate jaw but in some specimens it is so tightly articulated that a suture line is not discernible. There does not seem to be a separate fossa. It has not been determined whether this secondary jaw is a maxilla III or a connective part. In modern polychaeta the maxillae are not closely articulated especially when the mouth is extended.

There is a slight similarity between *Staurocephalites aequilateralis* and *Staurocephalites triplus* Eller (1945). They differ in the number and type of denticles and the width of the jaw as compared with the length.

***Staurocephalites articulatus* sp. nov.**

Maxilla II or III. Plate 23, Fig. 1-3, 7

The jaw is large and a figured specimen measures 1.64 mm. in length. The anterior end is obliquely truncate while the posterior extremity is well rounded. Along the inner margin a series of 16 to 18 sharp-pointed, conical, backward directed denticles extends more than three-quarters the length of the jaw. The first denticle is large and is followed by two or three small, closely spaced teeth. The remaining denticles are large and decrease in size only slightly at the posterior end. The area of the under side of the jaw is about twice as great as the upper side. A large shallow fossa extends the full length of the upper side of the jaw. The upper margin of the fossa is thickened while the under margin is thin and often broken.

On the under side of several specimens a small, thin jaw is found in articulation. From 13 to 19 sharp-pointed, backward directed denticles of nearly uniform size extend along the curved inner margin nearly to the posterior end. The anterior end of the jaw is acute while the posterior end is well rounded. The margin of the anterior end is slightly folded. A narrow fossa occupies the upper side of the jaw. The margins of the fossa are thin and usually broken. The figured specimens measure from 0.59 mm. to 0.82 mm. in length.

Since the smaller jaw, probably a maxilla III, of the articulated specimens is a part of a natural species no special designation will be given to it. Neither of these forms resemble very closely any other species.

***Staurocephalites aequemarginalis* sp. nov.**

Maxilla II. Plate 23, Fig. 4-6

Both the anterior and posterior ends or margins of the jaw are truncate and equal in width. Along the inner margin a series of 13 backward directed denticles extends nearly to the posterior extremity. The first denticle is large and appears to be an extension of the thickened margins. The second denticle is usually small. It is followed by five or six larger teeth and then by five or six denticles that are much smaller. The upper surface of the jaw is concave or flattened. A narrow fossa occupies the full length of the jaw. The figured specimens average about 0.65 mm. in length.

The form does not very closely resemble any other described species.

Staurocephalites alterostris sp. nov.

Maxilla II. Plate 23, Fig. 8-15

In size the jaw is large, measuring from 0.86 mm. to 1.53 mm. in length. The width, as compared with the length, is great, the ratio being about four to one. A series of 13 to 18 triangular shaped, sharp-pointed, backward directed denticles extends along the inner margin nearly to the posterior extremity. The first denticle is large and appears to be part of the inner margin. The remaining denticles are slightly smaller at the anterior and posterior ends than at the center of the jaw. The anterior end of the jaw is extended to a high and acutely pointed beak while the posterior end is well rounded. The sides of the jaw are flattened or slightly concave. This is reflected in a narrow fossa which occupies the complete upper surface of the jaw. The margins of the fossa are thin and usually incomplete.

The acute anterior extremity of *Staurocephalites pyramis* Eller (1944) and *Staurocephalites alterostris* is similar. The forms differ in the size and in the arrangement of the denticles.

Genus OENONITES Hinde, 1879

Oenonites aequibrachiatus sp. nov.

Maxilla II. Plate 23, Fig. 16

The jaw is subtriangular, wide anteriorly, and tapers to a blunt posterior end. The figured specimen measures 0.52 mm. in length. Along the inner margin a series of 11 conical, sharp-pointed, backward directed denticles extends the full length of the jaw. The first denticle is slightly larger than the rest of the series. The other denticles are nearly equal in size, decreasing only slightly to the posterior. The upper surface of the jaw is irregularly concave and contains about one-half the area of the under surface. A shallow fossa extends the full length of the upper side. The margins of the fossa are slightly thickened.

Except for the width of the jaw and the character of the denticles *Oenonites aequibrachiatus* resembles *Oenonites coggeshalli* Eller (1945) and *Oenonites imparidentatus* Eller (1945). There is a similarity between some specimens of *Oenonites grandidentatus* Eller (1934) and *Oenonites aequibrachiatus*. They differ in the type of denticles and the length as compared with the width of the jaws.

Oenonites abscisus sp. nov.

Maxilla I. Plate 23, Fig. 18-19

The jaw is narrow and subtriangular in outline, and abruptly truncate at the posterior end. Along the inner margin a series of 10 large, conical denticles extends about three-fourths of its length. The first denticle or fang is large and is followed by three teeth of nearly the same size. These denticles point in various directions, from forwards to backwards. The remaining denticles are smaller and decrease slightly in size to the posterior extremity. The wide posterior end is indented by a shallow bight which forms a small shank at the outer margin. A wide, deep fossa occupies more than one-half

of the upper surface. The margins of the fossa are thickened and rounded. The figured specimen measures 0.52 mm. in length.

Oenonites abscisus does not very closely resemble other species of this genus.

Oenonites orthodontus? Eller

Maxilla I. Plate 27, Fig. 15

Oenonites orthodontus Eller, 1938 (Annals of the Carnegie Museum, v. 30, p. 280, plate 28, Fig. 11-12).

Many additional specimens of this form were found in the fauna. It was noticed that the outer margin in about half of the specimens was not straight as shown in the original figures. Whether this shank-like protuberance constitutes a specific difference will not be decided at this time.

Genus PALEOENONITES Eller, 1942

Paleoenonites auctificus sp. nov.

Maxilla II. Plate 23, Fig. 17

The shape of the jaw is irregularly rectangular and the width is nearly equal to the length. Some specimens resemble a parallelogram. The inner margin is straight and bears from six to nine small, conical denticles that extend nearly to the posterior end. The fang is larger than the other denticles and is hooked. The denticles decrease in size posteriorly and are pointed in a backward direction. The anterior margin is irregularly curved but forms a wide angle with the nearly straight outer margin. The posterior end is enlarged and forms nearly right angles with the lateral margins. A wide, shallow fossa occupies most of the upper surface of the jaw. The area on the upper surface between the margin of the fossa and the denticles is very narrow. In length, jaws average about 0.33 mm.

Only a few specimens of this species were found. In shape, *Paleoenonites auctificus* does not agree with many other forms. *Paleoenonites accuratus* Eller (1942), *Paleoenonites dillae* Eller (1945) and *Paleoenonites parallelus* Eller (1944) have a similar angular shape and wide posterior margin. They differ in other characteristics such as the shape of the fossa and the size and arrangement of the denticles.

Paleoenonites angiportus sp. nov.

Maxilla II. Plate 23, Fig. 20-22, 26-27

In outline, the jaw is irregularly rectangular, wide anteriorly, and the lateral margins taper slightly to the truncate posterior extremity. The anterior margin is indented by an irregularly shaped bight that is deeper in the left jaws and forms two small shanks. Along the inner margins a series of 10 to 12 blunt, conical denticles extends nearly the full length of the jaw. The first denticle or fang is large and when viewed from the upper side appears to be a continuation of the thickened anterior margin. The remaining denticles decrease slightly in size to the posterior. On the upper surface a narrow fossa extends the full length of the jaw. The passage is

constricted near the middle giving it the shape of a figure eight. The inner margin of the fossa is thickened and triangular in outline while the outer margin on the upper side is irregularly rounded. The under side of the jaw is concave and the upper side is convex. A typical specimen measures 0.43 mm. in length.

The species conforms well with the genus but it does not resemble *Paleoenonites alpenaensis* (Eller) from this horizon (or any other species) closely enough to warrant comparisons.

***Paleoenonites armigerus* sp. nov.**

Maxilla II. Plate 23, Fig. 23, 25

The jaw, in outline, is triangular, wide anteriorly, and the lateral margins taper to an acute posterior extremity. The inner margin is armed with a series of about twelve, large, conical, sharp to blunt, denticles which extend nearly the full length of the jaw. The anterior denticles are large and point forward while the posterior ones decrease uniformly in size and point backwards. The fang is large and is a continuation of the lateral margins. Specimens average about 0.7 mm. in length. The anterior margin is slightly incurved and forms a small, acute shank with the outer margin. On the upper surface a narrow, irregularly shaped fossa extends the full length of the jaw. The inner margin of the fossa is broadly triangular while the anterior margin is irregularly incurved. Both margins are slightly thickened and rounded. The under surface of the jaw is convex while the upper surface between the fossa and denticles may be concave or flattened.

Paleoenonites armigerus is similar in outline to *Paleoenonites acutus* Eller (1945), *Paleoenonites latissimus* Eller (1942), *Oenonites kopfi* (1940), *Oenonites fornicatus* Eller (1940) and *Oenonites radula* Hinde (1882). They differ mostly in the character and shape of the fossa. The denticles, especially the anterior ones, are large as compared with those of other species.

***Paleoenonites alpenaensis* (Eller)**

Maxilla II. Plate 23, Fig. 24

Oenonites alpenaensis Eller, 1938 (Annals of the Carnegie Museum, v. 27, p. 280, plate 29, Fig. 1-2).

When large numbers of specimens of both left and right jaws were examined it was noticed that the first three denticles were comparatively large and the remaining ones uniformly small. In the original description it was not noted that the anterior margin is rounded near the fang and then incurves to form a forward-pointing shank with the outer margin.

***Paleoenonites andaculus* sp. nov.**

Maxilla II. Plate 27, Fig. 8-10

The under side of the jaw is narrow and subtriangular in outline. The figured specimens measure from 0.45 mm. to 0.62 mm. in length. On the inner margin a series of eight triangular-shaped, blunt to sharp-pointed denticles extends nearly the full length of the jaw. The first denticle is

large and bold and is followed by teeth that become smaller to about the middle where they diminish rapidly in size to the posterior end. In most specimens the teeth are perpendicular to the inner margin. The outer margin on the upper side is straight or slightly curved, thickened, and rounded. The outer margin on the under side is thin and extended posteriorly to form a large shank. The upper surface of the jaw is slightly concave while the under surface is convex. A narrow fossa extends the length of the jaw.

There are many specimens of this form in the fauna. In all cases the shank is broken. It was probably large and extended in a backward direction. The species does not correspond very well to other described forms. Figure 30 of *Paleoenonites clinatus* Eller (1945) is slightly similar.

***Paleoenonites arcuatellus* sp. nov.**

Maxilla II. Plate 27, Fig. 11-12

The jaw is small, arched, subtriangular in outline, wide anteriorly, and tapers to an acute posterior extremity. The figured specimen measures 0.38 mm. in length. On the inner margin a series of nine or ten, thin, very sharp, conical, backward directed denticles occupies the full length of the jaw. The first denticle is small and is followed by two progressively larger ones. The fourth tooth is minute. The next three are medium and uniform in size. The remaining denticles are small. On the upper surface a deep fossa, wide anteriorly and narrow posteriorly extends the full length of the jaw. Its margins are partly thickened and rounded. The upper surface of the jaw is concave while the under surface is highly convex. The outer margin at the anterior end is rounded and extended to form a small shank.

It was rather difficult to place this species generically. If the extended portion on the outer margin is a shank, then the form belongs in the genus *Paleoenonites*. Except for the size of the shank *Paleoenonites arcuatellus* is similar to *Paleoenonites clinatus* Eller (1945). *Paleoenonites arcuatellus* and *Oenonites excavatus* Eller (1941) are similar in general shape and in the arrangement and character of the denticles. They differ in that the outer margin of *Oenonites excavatus* is thickened and rounded while the margin of *Paleoenonites arcuatellus* is thin and extended at the anterior end.

Genus EUNICITES Ehlers, 1868

***Eunicites apicalis* sp. nov.**

Maxilla IV or V. Plate 24, Fig. 1

In outline, the jaw is subtriangular measuring 0.94 mm. in length and 0.75 mm. in width. From the wide base the jaw tapers rapidly to a narrow, sharp-pointed, conical, forward directed denticle. A wide fossa occupies most of the posterior end. The margins of the fossa are thickened and rounded, especially anteriorly, and the upper one appears to be grooved. The posterior margin is extended and forms a small, hooked shank with a lateral margin.

Eunicites denticuleatus Eller (1942) and *Eunicites whiteae* Eller (1945) resemble *Eunicites apicalis* in proportions but differ in the shape of the fossa and curvature of the posterior margin. The forward pointing of the denticle is a departure from the usual backward direction.

***Eunicites acidus* sp. nov.**

Maxilla IV or V. Plate 24, Fig. 2

The jaw is a single denticle with a small, narrow, irregularly shaped shank. The denticle is conical, sharp pointed and backward directed. A round or oval fossa occupies the posterior area. The margins of the fossa are thickened and rounded. The upper margin of the fossa is slightly extended at the posterior end. The figured specimen measures 0.32 mm. in length.

Except for the shape of the fossa and the position and shape of the shank there is a similarity between *Eunicites acidus* and *Eunicites aculeus* Eller (1945) and *Eunicites whiteae* Eller (1945). *Eunicites anquisitus*, Plate 24, Fig. 10-11, is similar to *Eunicites acidus* but differs in the size and shape of the shank.

***Eunicites alveolaris* sp. nov.**

Maxilla IV or V. Plate 24, Fig. 3

The jaw is a single denticle or fang extending from a wide, incurved base. The denticle is flattened, sharp-pointed, backward directed with a concave area or small channel extending nearly the full length of the jaw. A very narrow fossa occupies the posterior region of the jaw. The figured specimen measures 0.83 mm. in length.

There is a question whether this jaw might not be a maxilla I or a forceps. Its similarity to many modern maxilla IV and V and the width of the posterior as compared with the length of the jaw are reasons why it is placed in a minor category at this time. *Eunicites petasus* Eller (1940) is similar except for the shape of the fossa and the roundness of the denticle in cross-section.

***Eunicites asaphus* sp. nov.**

Maxilla IV or V. Plate 24, Fig. 4; Plate 27, Fig. 22

The jaw is flattened, wide posteriorly and tapers abruptly to a sharp-pointed, backward directed denticle. The posterior margin is thin and broken in all specimens. An irregularly shaped fossa is present on the upper side. The margins of the fossa are slightly thickened. The figured specimen measures 1.02 mm. in length and 0.41 mm. in width.

There is some question as to whether this form might not be a maxilla I. The shortness of the denticle, however, suggests that it is a minor maxilla. This species conforms well with this genus but it does not resemble any other species closely enough to warrant comparison. The thinness and poor preservation of the posterior margin of maxilla IV and V often occur in polychaete jaws.

***Eunicites altidorsalis* sp. nov.**

Maxilla IV or V. Plate 24, Fig. 5

The jaw consists of a single, heavy, subtriangular denticle that tapers gradually from a wide, nearly straight base to an acute, high-backed, anterior end. The figured specimen measures 0.83 mm. in length and 0.59 mm. in

width. The outer margin may be slightly curved inward or outward or it may be straight. The inner margin is straight to the posterior end where it turns abruptly to form a shank with the posterior margin. A narrow fossa extends the full length of the upper surface of the jaw.

There is a general similarity between *Eunicites altidorsalis* and other jaws of this type. It differs from *Eunicites apicalis*, Plate 24, Fig. 1, and *Eunicites admirandus*, Plate 24, Fig. 9, in the shape of the fossa and the shank.

***Eunicites acutirustris* sp. nov.**

Maxilla IV or V. Plate 24, Fig. 6

The jaw is composed of a single denticle with a wide base and shank. The denticle is triangular in outline, conical, sharp pointed and tapers rapidly to the anterior end. A wide fossa, with thick, rounded margins, occupies about one-half of the upper side of the jaw. The upper margin is nearly straight while the inner margin curves posteriorly to form a heavy shank. The jaw is nearly as wide as long and the figured specimen measures 0.42 mm. in length and 0.4 mm. in width.

Eunicites acutirustris is similar to *Eunicites ansatus* Eller (1945) except for the shortness of the denticle and the shape and size of the shank. This form is represented by a large number of specimens in the fauna.

***Eunicites apidodus* sp. nov.**

Maxilla V. Plate 24, Fig. 7-8

The jaw is a single, sharp-pointed, nearly straight, cone-shaped denticle. A large fossa occupies part of the upper surface and extends about one-third the way along the anterior edge of the jaw. The posterior margin is truncate and nearly at right angles with the lateral margins. The figured specimens measure 0.44 mm. and 0.56 mm. in length and 0.16 mm. and 0.27 mm. in width at the posterior end.

This form is common in the fauna but does not resemble very closely any other species. It is similar to *Eunicites cavus* Eller (1945) except for the posterior end and shank.

***Eunicites admirandus* sp. nov.**

Maxilla IV or V. Plate 24, Fig. 9

The jaw is a single, subtriangularly shaped, sharp-pointed, conical backward directed denticle. The figured specimen measures 0.72 mm. in length and 0.46 mm. in width. A wide fossa occupies more than half the area of the upper surface of the jaw. The outer margin of the fossa is thickened, especially at the posterior end. The inner margin curves from the denticle and forms a small irregular shaped shank with the posterior margin.

Specimens of this type are common in the fauna. *Eunicites denticulatus* Eller (1942) and *Eunicites whiteae* Eller (1945) resemble *Eunicites admirandus* except for the shape of the fossa and the curvature of the posterior margin. *Eunicites admirandus* has a similar posterior margin but the fossa and the direction in which the denticle points are different.

***Eunicites anquisitus* sp. nov.**

Maxilla IV or V. Plate 24, Fig. 10-11

The jaw is a long, slender, sharp-pointed, forward directed denticle. A round fossa with heavy, rounded margins is present at the base of the denticle. Adjacent to the fossa is a rectangularly shaped, handle-like, shank that is at right angles with the denticle. The figured specimens measure 0.54 mm. and 0.52 mm. in length.

Eunicites aculeus Eller (1945) is similar to *Eunicites anquisitus* except for the position of the fang in relation to the denticle. Jaws of this kind are common in recent polychaeta.

***Eunicites acinaciformis* sp. nov.**

Maxilla I. Plate 24, Fig. 12-13

The forceps is long, gently curved, narrow and rounded anteriorly, wide and flattened posteriorly. The figured specimens measure 0.81 mm. in length. The posterior margin is notched by a crescent-shaped indentation. A small irregularly shaped fossa occupies the posterior area. On the upper side the margin of the fossa is wide and rounded. Most of the jaw is convex except for a triangular area on the under side adjacent to the fossa.

Many recent species have similar forceps. The shape and position of the fossa are unlike those of other forms of *Eunicites*.

***Eunicites articulatus* sp. nov.**

Maxilla I. Plate 24, Fig. 14, 18-21

The jaw or forceps is long, angular, flattened and wide posteriorly and is well hooked at the anterior end. When viewed from the side it may be seen that the inner margin curves rapidly from the hook to about the midpoint where the margin becomes straight. The posterior margin is wide and nearly truncate. The outer margin is nearly straight in the posterior half or two-thirds of the jaw and then curves rapidly to form the hook. A large, deep fossa occupies nearly half the jaw. The margins of the fossa are thickened and rounded. The two figured specimens measure 0.45 mm. and 0.78 mm. in length and 0.16 mm. and 0.39 mm. in width at the widest part.

Although this species conforms well with the genus, it does not resemble other species closely enough to warrant comparisons. Many modern polychaete forceps have a similar wide posterior end.

***Eunicites apiculatus* sp. nov.**

Maxilla IV or V. Plate 24, Fig. 15-17

The jaw consists of a short, sharp-pointed, conical, straight or slightly curved denticle extending nearly at right angles from a large, heavy, angular base. In most specimens a large fossa occupies nearly two-thirds of the upper surface of the jaw. The margins of the fossa are very thick and rounded. Between the denticle and the fossa is a flattened or slightly concave area that appears to be a point of leverage or attachment for the muscle. From the denticle the inner margin curves broadly to the posterior end. The figured specimens measure 0.75 mm. in length.

Arabellites uncinatus Hinde (1882) is similar to *Eunicites apiculatus*

except for the length of the base and the curvature of the denticle. In several modern polychaete genera, *Lumbrinereis*, *Drilonereis*, *Arabella*, and *Aglaurides*, the fourth and fifth maxilla is a single tooth not unlike *Eunicites apiculatus*.

***Eunicites acutululus* sp. nov.**

Maxilla IV or V. Plate 24, Fig. 22

The jaw is small and is composed of a single denticle extending from an irregularly shaped, forward directed base or shank. The denticle is thin, conical, straight and sharp pointed. The outer margin is straight but curves at the posterior end. The inner margin is straight to the base where it forms an acute angle with the posterior margin. A deep fossa occupies the entire posterior area. The posterior margin is slightly incurved. The described specimen measures 0.48 mm. in length.

Eunicites acutululus is very similar to *Eunicites whiteae* Eller (1945) and *Eunicites denticulatus* Eller (1942). They differ from each other in the length and width of the denticle, the shape of the fossa, and the position of the shank.

***Eunicites ambocoelius* sp. nov.**

Maxilla V. Plate 24, Fig. 23

The jaw is a single, short, cone-like denticle that tapers rapidly to a blunt anterior end. The width of the figured specimen is 0.41 mm. and the length is slightly less. The posterior part of the jaw is subrectangular in outline and the margins are nearly at right angles with each other. A narrow, shallow fossa is present along two margins of the posterior end. When viewed from the under side a high protuberance is present at the posterior area. This is reflected on the upper side by a concavity.

Except for some general features, this species is unlike other forms.

***Eunicites conus* (Eller)**

Maxilla IV or V. Plate 24, Fig. 24-25

Arabellites? conus Eller, 1938, Annals of the Carnegie Museum, v. 27, p. 277, 278, plate 29, Fig. 7.

A number of specimens of this type were found in the fauna. The fang is either pointed or blunt and is directed backwards. The posterior margin is often broken but it forms a wide shank with the inner margin. The figured specimens measure 0.84 mm. and 0.89 mm. in length. Since the fang is directed backwards the jaw must be located in the posterior part of the mouth. Thus, the form is probably a IV or V maxilla and should be under the genus *Eunicites* for the best paleontological reference.

***Eunicites axinus* sp. nov.**

Maxilla IV or V. Plate 24, Fig. 26

The jaw is a single, sharp-pointed, conical, forward directed, ax-shaped, denticle attached to a large square or rectangular base. The figured specimen measures 0.64 mm. in length and 0.43 mm. in width. A narrow fossa

extends for about half the length of the upper side of the jaw. Adjacent to the fossa is a wide base or shank which is straight sided and slightly concave on the upper side.

The wide base or shank of *Eunicites axinus* must have given considerable leverage and strength to the jaw. In this manner it is similar to *Eunicites ansatus* Eller (1945) but otherwise the jaws do not correspond very closely.

***Eunicites angulatus* Eller**
Maxilla I. Plate 25, Fig. 1-2

Eunicites angulatus Eller, 1938, Annals of the Carnegie Museum, v. 27, p. 278, plate 28, Fig. 13.

In the original description a left jaw was described. A right jaw illustrated herewith corresponds very well except that it is not as angular in cross-section and the surface is more even. On the under side of the forceps at the posterior end there is an oval-shaped concave area surrounded by a raised, well rounded margin. The figured specimen measures 2.59 mm. in length.

***Eunicites? alienus* sp. nov.**
Maxilla IV. Plate 26, Fig. 9

The jaw consists of an elongate, curved, subtriangular denticle which tapers gradually from a truncate posterior end to an acute anterior end. The figured specimen measures 0.62 mm. in length and 0.16 mm. in width at the posterior end. A series of long needle-like denticles occupies about two-thirds of the inner margin and extends nearly to the posterior end. The denticles are about equal in size and directed abruptly forward. A fossa is restricted to the posterior end and to a small area of the upper surface.

The spine-like teeth differ from the denticles found on most jaws. In a paper (Eller, 1945) on the scolecodonts found in the Trenton Series a number of forms having minute, thorn-like crenulations or serrations were described. The species were placed in the genus *Eunicites* until further study could be given them. The above described jaws are also assigned to the genus *Eunicites* until more material is available.

***Eunicites altinsculus* sp. nov.**
Maxilla IV or V. Plate 27, Fig. 13-14

The jaw is rather high, large, triangular in shape, and consists of a long shank or plate with a short, conical denticle at the anterior end which is at right angles to the lateral margins. The figured specimens measure 0.54 mm. and 0.64 mm. in length and 0.39 mm. and 0.59 mm. in width. A large deep fossa extends the full length of the jaw. The margins of the fossa are usually thin and broken.

Eunicites altinsculus resembles *Eunicites colossus* Eller (1945) in size and shape. The two species differ in the shape of the shank and fossa. A Silurian form from Gotland, *Arabellites uncinatus* Hinde, 1882, corresponds to *Eunicites altinsculus* rather closely.

***Eunicites acidaspis* sp. nov.**

Maxilla V. Plate 27, Fig. 12, 16-17

The jaw is a small, angular, subtriangular shaped, sharp-pointed single denticle. A large round or irregularly shaped fossa occupies the posterior end. The margin of the fossa is slightly thickened. The upper side of the jaw between the fossa and the anterior end is flattened or slightly concave. There seems to be a small ridge in the middle and a slightly raised rim around the margins. The figured specimen measures 0.38 mm. in length.

While *Eunicites acidaspis* resembles many other forms in a general way, the individual characteristics set it apart from any other described species.

***Eunicites absonus* sp. nov.**

Maxilla IV or V. Plate 27, Fig. 18-19

The jaw is the shape of a small hook. The posterior end is wide and irregular and shows no evidence of a fossa. The jaw becomes narrow at the mid-area, thickens gradually, and then terminates abruptly as a very sharp-pointed denticle. The figured specimen measures 0.38 mm. in length.

The posterior end of this rather incongruous specimen is thin and probably partly missing. There is a possibility that there might have been a small fossa present for the attachment of a muscle. At first it was thought that the hooked shape of the jaw might not be natural. The presence of a number of specimens in the collection, however, ruled out this possibility. *Eunicites absonus* does not correspond to any other form.

Genus STAUONEREISITES gen. nov.

The jaw is wide, subtriangular in outline, and usually short in length. A series of two or more denticles occupies the inner margin. The first denticle may be large and the remaining teeth small or large and uniform in size. The anterior margin is straight or curved and is usually extended to form a wide or narrow shank. From the denticle the inner margin often continues to form a rectangular, rounded or acute shank. The shank may be straight or curved outward. In most forms, the under side is concave. A deep to shallow fossa occupies the complete upper side. The margins of the fossa may be thickened or thin and broken.

Genotype. *Stauronereisites auriculatus* sp. nov.

Maxilla of the modern genus *Stauronereis* Verrill (1900), (Treadwell, 1921) resemble those of *Stauronereisites* in a general way. This is especially so in *Stauronereis rubra* Grube (Treadwell, 1921, p. 123, text figures 449, 450). In this modern form the maxilla is made up of a series of jaws similar to the radula of gastropods. Possibly the fossil form occurred in this manner and consisted of only one type of jaw. Formerly, the writer placed jaws of this kind in the genus *Eunicites*. The genotype, *Stauronereisites auriculatus*, *Eunicites tolmachoffi* Eller (1945) and three other new species, *Stauronereisites adversarius*, *Stauronereisites aequalis*, and *Stauronereisites abditivus*, described in this paper, are included in the new genus. With additional material and study *Ungulitis aculeatus* Stauffer (1933), *Eunicites* (?) *index* Eller (1944), *Oeononites parvulus* Hinde (1882), and *Leodicites caley* Eller (1944) might also be placed in the genus *Stauronereisites*.

***Stauronereisites auriculatus* sp. nov.**

Maxilla III. Plate 25, Fig. 14-15

The jaw is small, subrectangular in outline and measures from 0.43 mm. to 0.52 mm. in length. Two large, conical, sharp-pointed denticles are located at the anterior end of the inner margin. The first denticle is slightly larger than the second. From the denticles the inner margin continues and curves slightly backwards to form a large ear-like appendage or shank. A fossa is present on the upper side of the jaw and the upper posterior margin is extended to form a large rectangular shank.

Eunicites tolmachoffi Eller (1945) is similar to *Stauronereisites auriculatus* except for the number and length of the denticles and the length and shape of the posterior end. The shanks and shape of *Stauronereisites auriculatus* must have given the jaw considerable movability and muscular effectiveness.

***Stauronereisites adversarius* sp. nov.**

Maxilla III. Plate 25, Fig. 10-12

The jaw is small, angular and wedge shaped in outline. The figured specimens measure 0.4 mm. and 0.29 mm. in length and 0.23 mm. and 0.22 mm. in width, respectively. Along the inner margin there is a series of four or five small blunt, conical denticles that extend nearly to the posterior end. The first denticle may be slightly hooked and appears to be a continuation of the anterior margin. The denticles increase slightly in size to the third tooth and then decrease to the posterior one. A large fossa occupies about one-half of the upper surface of the jaw. The posterior margin is thin and is turned towards and lies before the denticles. The under side is highly convex while the upper side between the denticles and the fossa is slightly concave.

There is a general similarity between *Stauronereisites adversarius* and *Eunicites tolmachoffi* Eller (1945) but in detail the two species differ widely.

***Stauronereisites abditivus* sp. nov.**

Maxilla III, Plate 25, Fig. 13

The jaw is subtriangular in outline and measures 0.43 mm. in length and 0.48 mm. in width. A series of three or four conical, sharp-pointed denticles occupies the inner margin. The first denticle is slightly larger and appears to be a continuation of the lateral margins. The remaining denticles decrease in size posteriorly. The elongated anterior margin may be nearly straight or curved upward. It terminates in a long, heavy shank. The outer and inner margins are extended, with the extremities widely separated, and they are about equal in length to the anterior shank. Usually they are broken. A large, narrow fossa occupies the upper side including the shank.

Stauronereisites abditivus resembles *Eunicites tolmachoffi* Eller (1945) and *Stauronereisites adversarius* (Plate 25, Fig. 10-12) in a general way. They differ mostly in the length of the shank and the length of the inner margin.

Stauronereisites aequalis sp. nov.

Maxilla III. Plate 27, Fig. 33

The jaw is subrectangular in outline and the figured specimen measures 0.39 mm. in length and 0.28 mm. in width. A series of five small, conical, sharp-pointed denticles extends along the inner margin. The teeth are nearly uniform or equal in size and point inward. A large fossa occupies more than one-half the area of the jaw. It is on a plane nearly parallel to the upper surface of the jaw. The rim of the fossa is wide and extends well beyond the anterior margin to form a broad shank. The margin of the fossa is thin and broken in all specimens.

Eunicites tolmachoffi Eller 1945, and *Stauronereisites adversarius* (Plate 25, Fig. 10-12) are similar to *Stauronereisites aequalis* in a general way. They differ mostly in the position and shape of the fossa.

Genus UNGULITES Stauffer, 1933**Ungulites acutidactylus** sp. nov.

Maxilla III. Plate 25, Fig. 3-4

All specimens of this species are broken at the posterior end. The jaw consists of two straight, narrow, sharp, finger-like denticles that occupy the anterior margin. The lateral margins, including the denticles, taper anteriorly to form a triangularly shaped jaw. The first denticle is large while the second is small in comparison. The figured specimens measure 0.62 mm. and 0.55 mm. in length. There is probably about one-tenth of a millimeter missing from the posterior end. A large fossa occupies about one-half of the upper surface of the jaw.

Stauffer (1933) described a species, *Ungulites bicuspidatus* Stauffer that resembles *Ungulites acutidactylus* closely except for the shape and character of the denticles. Except for the width and outline of the jaw *Ungulites bifurcus* Eller (1945) is similar to *Ungulites acutidactylus*.

Ungulites arquatus sp. nov.

Maxilla III. Plate 25, Fig. 5-6

The jaw is wide, arched, and subtriangular in outline. The figured specimens measure 0.97 mm. and 0.79 mm. in length. Two long, conical, backward curved, sharp-pointed denticles occupy the inner margin. In some specimens the denticles are nearly the same length. Most of the upper side of the jaw is occupied by a large, deep fossa. The margins of the fossa are thin and usually broken.

Ungulites arquatus is similar to *Ungulites bifurcus* Eller (1945) except for the width of the jaw and length of the denticles. *Ungulites bicuspidatus* Stauffer (1933) resembles *Ungulites arquatus* in a general way but differs in the length of the denticles.

Ungulites agglomeratus sp. nov.

Maxilla III or IV. Plate 25, Fig. 7-9

The jaw is large, wide, and heavy in character. Two denticles, the first one large, the second small, are present on the anterior margin. A large,

rectangular fossa occupies the posterior end. The walls of the jaw are thick at the opening of the fossa. The under side of the jaw is concave while the upper side is highly convex. The figured specimen measures 0.99 mm. in length and 0.56 mm. in width.

There is a slight resemblance between *Eunicites divergens* Eller (1938) (Plate 29, Fig. 11) and *Ungulites agglomeratus*. In the residue a cluster or mass of six or more jaws of this species was found (Fig. 7-8) compressed so tightly together that it is difficult to determine the posterior margins. The jaws are in no way articulated in a natural position. In the modern genus *Stauronereis* Verrill, the maxillary apparatus is composed of two rows of toothed plates. The 30 or more jaws in each series vary little from each other. It is possible that the group of fossil jaws (Fig. 7) distributed in this manner, and consisting of one type of jaw, belong to a form similar to those found under the modern genus *Stauronereis*.

***Ungulites astrictus* sp. nov.**

Maxilla III. Plate 27, Fig. 20

The jaw is large, heavy and wide. The figured specimen measures 0.83 mm. in length and 1.31 mm. in width. A series of five conical, blunt denticles occupies the inner margin. The first and second denticles are extremely large and are followed by two closely compact teeth that are small in comparison. The under surface of the jaw is concave while the upper surface is convex. A narrow fossa occupies the complete outer side and part of the anterior end of the jaw. The margins of the fossa are broken so that it is not possible to determine the true nature of its shape.

Heavy jaws of this kind are not common among scolecodont fauna. Stauffer (1933) described a species, *Ungulites aculeatus*, of this type.

***Ungulites auctus* sp. nov.**

Maxilla III. Plate 27, Fig. 21

The jaw is large, roughly triangular in shape and about twice as wide as it is long. The figured specimen measures 0.54 mm. in length and 1.16 mm. in width. Two large, blunt denticles occupy the inner margin. The first denticle is very large and the second is about one-half its size. The under surface of the jaw is flattened or slightly concave. A large, wide fossa occupies the complete upper side of the jaw. Part of the margin of the fossa is thickened and rounded.

Due to the width of the jaw and the size and character of the denticles, *Ungulites auctus* does not resemble any other species of this genus very closely.

***Ungulites* sp. indet.**

Maxilla II. Plate 27, Fig. 22

This form, although broken and represented by only one specimen, seems worth mentioning. The jaw is large and measures at least 1.5 mm. in length. On the inner margin are three conical, sharp-pointed denticles. The first, which is broken, was probably large and forward directed. A large fossa

occupies the posterior area. It is difficult to know which way the specimen should be oriented. The figured position is based on the large denticle.

Ungulites sp. indet.

Maxilla III. Plate 27, Fig. 24

The jaw is subrectangular in outline and the figured specimen measures 0.46 mm. in width. Along the inner margin, a series of five conical, blunt denticles is followed intermittently by a series of minute crenulations. The anterior margin is broken but enough of the jaw is preserved to determine that the jaw did not extend much beyond its present limit. Both the upper and lower surfaces of the jaw are irregularly convex and concave. A narrow fossa occupies more than one-half the upper side of the jaw. The margin of the fossa on the under side is thin and broken.

Since this form is represented by only one specimen which is also broken, specific identification will not be attempted. The specimen seems worth figuring because of the interesting character and arrangement of the denticles.

Ungulites alcornis sp. nov.

Maxilla II. Plate 27, Fig. 29-30

The jaw is long and narrow. The figured specimen measures 0.34 mm. in width and 0.83 mm. in length. A series of three large, conical blunt- to sharp-pointed, forward directed denticles occupies the anterior end. The first denticle or fang is large and points nearly straight forward. The other two denticles are nearly the same size and are directed slightly inward. The upper surface of the jaw is convex except for a long groove that extends the length of the jaw. On the under surface a depressed area occurs posterior to the denticles. A fossa occupies the posterior end and part of the upper side of the jaw.

Except for some general features, this form is unlike other species of the genus. It is rather rare in the fauna.

Ungulites attenuatus sp. nov.

Maxilla IV. Plate 27, Fig. 32

The jaw is subtriangular in shape and the figured specimen measures 0.43 mm. in length and 0.62 mm. in width. Along the inner margin is a series of three weak, small, conical, blunt denticles. The first denticle is the largest and it points directly inward. It is followed by two teeth that are nearly the same size and which are directed slightly backward. The under side of the jaw is flattened posteriorly and convex adjacent to the denticles. A large fossa occupies most of the upper side of the jaw. The margins of the fossa are thin and partly broken.

This form, with its denticles small as compared with the rest of the jaw, does not very closely resemble any other species.

Genus ANISOCERASITES gen. nov.

The jaw is arched and subrectangular in outline. A series of three or more sharp-pointed, triangular or cone-shaped denticles occupies the inner margin. From the long, wide or narrow, medial tooth, the denticles on each side decrease gradually or abruptly to the anterior and posterior ends. The denticles may be straight or curved and may be directed backward. A deep angularly shaped fossa occupies the upper side of the jaw.

Genotype. *Eunicites tanaodus* Eller

Annals of the Carnegie Museum, v. 27, p. 279, plate 29, Fig. 5-6.

Stauffer (1933) in his description of the genus *Ungulites* included jaws of this type. The genotype, *Ungulites bicuspidatus* Stauffer, consists of a "long, sharp, curving tooth, on one side of which is a single, closely set similar but smaller tooth." This form does not correspond, or seem to be related, to the species included in the new genus. The genotype, *Anisocerasites tanaodus* (Eller), *Ungulites tridentatus* Stauffer (1933), *Ungulites confertus* Eller (1945) and five new species, *Anisocerasites aspidodus*, *Anisocerasites acidentatus*, *Anisocerasites acanthophorus*, *Anisocerasites amplimarginatus*, and *Anisocerasites acicularis*, described in this paper, are included in the new genus. In the modern polychaete genus *Anisoceras* Grobe (1856) the jaws are arranged in a series made up of many identical jaws. The forms described under the genus *Anisocerasites* appear to be similar to those of *Anisoceras* and may have been also arranged in a like manner. Verrill (1900) showed that *Anisoceras* was preoccupied and proposed instead *Stauronereis*.

Anisocerasites aspidodus sp. nov.

Maxilla III. Plate 25, Fig. 16; Plate 27, Fig. 31

The jaw is sub-oval in outline and the width and length are about the same in the recovered specimens. The outer margins are broken which may shorten the jaw. The figured specimen measures 0.78 mm. in length and 0.85 mm. in width. Along the inner margin is a series of six conical, blunt, backward directed denticles that are arranged in a circular manner. The first and second denticles are small while the third is several times as large. The two anterior denticles seem to originate from the under side of the third denticle. The remaining denticles decrease in size to the posterior end. A large fossa occupies most of the upper side of the jaw.

The arrangement and character of the denticles differ from those of other species. There is a slight resemblance between *Anisocerasites tanaodus* (Eller) (1938) and *Anisocerasites aspidodus*.

Anisocerasites acidentatus sp. nov.

Maxilla III. Plate 25, Fig. 17-18; Plate 27, Fig. 25-26

Unbroken specimens are elongate and a figured specimen measures 0.83 mm. in length and 0.38 mm. in width. A series of five conical, blunt- or sharp-pointed denticles occupies the inner margin. The first and fifth denticles are small and very sharp pointed. The third denticle is usually the largest and is often blunt. In most specimens the second and fourth denticles

are intermediate in size. A large fossa occupies the posterior part of the jaw. Its true shape can not be determined since most of the specimens are broken or partly so. The upper side of the jaw is convex while the under side is slightly concave.

Anisocerasites aciedentatus is similar to *Anisocerasites confertus* (Eller) (1945) in general shape but differs in the arrangement of the denticles and concavity of the under side.

***Anisocerasites acanthophorus* sp. nov.**

Maxilla III. Plate 25, Fig. 19-20; Plate 27, Fig. 27-28

The jaw is elongate and broken specimens are more than twice as long as they are wide. Figured specimens measure 1.06 mm. and 0.99 mm. in length and 0.29 mm. and 0.35 mm. in width. A series of three sharp-pointed denticles occupies the inner margin. The first and third denticles are small while the middle denticle is large and hooked. A large fossa occupies the posterior end of the jaw. The upper and under surfaces of the jaw are irregularly convex.

Except for the size, number and arrangement of the denticles *Anisocerasites acanthophorus* is similar to other species of the genus. There is a close resemblance between *Anisocerasites acanthophorus* and *Anisocerasites tridentus* (Stauffer) (1933). The length of the jaw and the middle denticle differ in the two species.

***Anisocerasites amplimarginatus* sp. nov.**

Maxilla III. Plate 25, Fig. 21

The jaw is thick and subtriangular in outline. On the curved inner margin a series of seven blunt, conical denticles extends the full length of the jaw. The first denticle is minute, and the second somewhat larger, while the third is very large in size. The remaining denticles decrease rapidly in size to the posterior end. A large, deep, rounded fossa occupies most of the upper surface of the jaw. The margins of the fossa are thickened and rounded. The anterior margin is long and straight and forms a large shank with the incurved outer margin. The figured specimen measures 0.59 mm. in length and 1.3 mm. in width.

Anisocerasites amplimarginatus is very similar to *Anisocerasites tanaodus* (Eller) (1938). They differ in the curvature of the inner and anterior margins, the shape of the fossa and the general character of the denticles.

***Anisocerasites tanaodus* (Eller)**

Maxilla. Plate 26, Fig. 1-4

Eunicites tanaodus Eller, 1938, Annals of the Carnegie Museum, v. 27, p. 279, plate 29, Fig. 5-6.

The fauna contains a number of specimens of this species. There is a similarity between *Anisocerasites tanaodus* (Eller), *Anisocerasites amplimarginatus* and *Anisocerasites aspidodus*. The opening of the fossa of *Anisocerasites tanaodus* (Eller) is in the same plane as the denticles. This gives an abrupt inward curvature to the upper surface between the fossa and the denticles. Jaws with a large medial tooth and smaller teeth on each side

are not common in scolecodont faunas. In some species of the recent polychaete genus *Stauronerus* Verrill (1900) (*Anisoceras* Grobe, 1856), two rows of about thirty jaws each of this type are found arranged in a series. It is possible that the fossil jaws belong to this type of maxillary apparatus. The fossil jaws are very large as compared with the modern forms. The figured specimens measure from 0.33 mm. to 0.75 mm. in length and from 0.46 mm. to 1.11 mm. in width.

***Anisocerasites acicularis* sp. nov.**

Maxilla. Plate 26, Fig. 5-6

The jaw is large and irregular in outline. A series of six, large, conical, sharp-pointed denticles extends the full length of the inner margin. The second and third denticles are very large and the denticles on each side decrease in size to the anterior and posterior margin. A large irregularly shaped fossa occupies the posterior and part of the upper surface of the jaw. The opening of the fossa is not in the same plane as the denticles. The under surface is extended to form a shank. The posterior margin is thin and broken. The figured specimen measures 0.78 mm. in length and 0.89 mm. in width.

Anisocerasites acicularis is similar to *Eunicites? index* Eller (1944) in a general way. The length and arrangement of the denticles are different and the area between the fossa and the denticles on the upper side is not the same. There is a resemblance between *Anisocerasites acicularis* and *Anisocerasites tanaodus* (Eller) (1938). They differ in the size and arrangement of the denticles and the plane in which the fossa opens.

***Anisocerasites validus* (Eller)**

Maxilla. Plate 26, Fig. 7-8; Plate 27, Fig. 34-35

Eunicites validus Eller, 1938, *Annals of the Carnegie Museum*, v. 27, p. 279, plate 29, Fig. 4.

A large number of specimens are present in the fauna. A left jaw was figured in the original description. The right and left jaws illustrated in this paper are similar except for the denticles which vary in length. The figured specimens measure from 0.45 mm. to 0.99 mm. in length.

Genus DIOPATRAITES Eller, 1938

***Diopatrites asper* sp. nov.**

Mandible. Plate 26, Fig. 10

The right mandible is elongate with a short, narrow, sharp-pointed shaft. The figured specimen, although broken, measures about 0.83 mm. in length. The inner margin is nearly straight and shows a ridge for articulation with the left mandible. Only a fragment of the left mandible is present and due to poor preservation it is not possible to follow the split between the two mandibles. The surface of the mandible is irregular in contour. The posterior end is incurved from the inner margin to form the shaft.

Diopatrites asper is similar to *Diopatrites diplexus* Eller (1945) except for the posterior end and shaft. The same is true of a number of species described by Eisenack (1939).

Diopatraites abruptus sp. nov.

Mandible. Plate 26, Fig. 11

The right mandible is narrow and elongate. Taking into consideration that the specimen is broken at the anterior end, the length would measure about 0.55 mm. Its width is about 0.16 mm. The inner margin of the plate is irregularly curved and shows evidence of structures for articulation. The outer margin is slightly broken or ragged but close examination suggests that very little of the plate is missing. The posterior end is slightly incurved and forms an abrupt, wide, sharp-pointed shaft. The surface of the mandible is irregularly convex and concave.

Diopatraites abruptus is so unlike any other species that comparisons are not feasible. It differs in the narrowness of the plate and the shortness and width of the shaft.

Diopatraites arctostriatus sp. nov.

Mandible. Plate 26, Fig. 12, 16-17

The mandible is long, angular, and slightly curved. Measurements of specimens is difficult since the posterior end is usually broken. An average specimen would measure about 0.85 mm. in length. The frontal plate is small, convex and oval in outline. At the anterior end are three teeth which decrease in size from the inner margin. The surface of the plate is ornamented with very fine striations. The shaft is long, slightly curved, and in most specimens as wide as the frontal plate. The upper surface is highly angular while the under side is deeply concave. The shaft decreases in size very gradually and terminates in a blunt posterior end.

In the form of the mandible, *Diopatraites arctostriatus* does not resemble any other species very closely. The number of teeth of *Diopatraites conformis* Eller (1938) is the same but otherwise the forms are dissimilar.

Diopatraites alveatus sp. nov.

Mandible. Plate 26, Fig. 13-14

Measurements of the mandible are not possible since only broken specimens were found. An average specimen is estimated to be 0.75 mm. in length. The frontal plate is small, oval in outline, and connected obliquely with the shaft at about a forty-five-degree angle. The surface is irregular concave and convex. Two conical teeth are present at the anterior end of the plate. The shaft is long in comparison with the size of the plate. It tapers gradually to a pointed posterior extremity. The upper side is highly convex while the under side is deeply concave or hollowed out.

Diopatraites alveatus is similar to *Diopatraites fustes* Eller (1942), *Diopatraites conformis* Eller (1938), and *Palaeosigma silurica* Eisenack (1939) in their general characteristics. They differ in the number of denticles and the shape and length of the shaft.

Diopatraites aequilaterus sp. nov.

Mandible. Plate 26, Fig. 15

The left mandible is nearly triangular in outline and tapers from a wide

posterior to an acutely pointed anterior end. The inner margin is slightly incurved and on the under side shows evidence of having fitted over the right plate. Along the nearly straight outer margin at about the middle is a well pronounced ridge. The posterior margin is broadly incurved to form a wide, long truncate shaft. The upper surface of the mandible is mostly convex except near the ridge on the outer margin and on the shaft. Measurements of the figured specimen are 0.7 mm. in length and 0.24 mm. in width.

An acute anterior end has not been found in other species of *Diopatraites*. The posterior end and shaft, however, are similar to other forms of the genus.

***Diopatraites aversus* sp. nov.**

Mandible. Plate 26, Fig. 18-20.

Measurements of the mandible range from 0.57 mm. to about 1.5 mm. in length. The frontal plate is large, heavy, and oval in outline. The upper surface of the plate is irregularly convex and concave. At the posterior end the plate turns away abruptly to nearly a forty-five-degree angle and continues to an acute end. The shaft is very short, about two-thirds the length of the plate. It is triangular in cross-section. The frontal plate and the shaft are not set at an appreciable angle with each other but are nearly straight.

Mandibles of this type are common in the fauna, but the anterior and posterior ends are usually broken. *Diopatraites aversus* is similar to *Diopatraites fustis* Eller (1942) and *Palaeosigma silurica* Eisenack (1939). They differ in the length of the shaft and the angle at which the frontal plate and the shaft are joined.

***Diopatraites accommodus* sp. nov.**

Mandible. Plate 26, Fig. 21

The left mandible is large and wide, and the figured specimen measures 1.62 mm. in length. The inner margin is straight and a groove on the under surface suggests that it would accommodate and articulate a right mandible. Except along the inner margin the surface is slightly concave. At the posterior end the margin incurves gently to form a long, wide, sharp-pointed shaft. The shaft is concave on the upper surface, and slightly convex on the under side.

Diopatraites accommodus does not very closely resemble any other species. Eisenack (1939) described a form, *Siluropella triangula*, that has some resemblance. They differ in the length and width of the plate and the length of the shaft.

***Diopatraites conformis* Eller**

Mandible. Plate 26, Fig. 22

Diopatraites conformis Eller, 1938, Annals of the Carnegie Museum, v. 27, p. 282-283, plate 29, Fig. 12-15.

The figured specimen is complete and well illustrates a left mandible. There are slight variations in the arrangement of the teeth and the shape

of the shaft of this specimen as compared with the originally described forms. The first denticle is larger than the two following while in the originally described specimens the middle denticle is largest and all denticles have large spaces between them. Perhaps the characters constitute specific differences but the writer hesitates to erect a new species without a larger series of specimens for study.

REFERENCES

EISENACK, A. E.

1939. Zeitschrift für Geologieforschung und Flachlandsgeologie, v. 15, pt. 3, p. 153-176, 13 figures, 3 plates.

ELLER, E. R.

1934. Annals of the Carnegie Museum, v. 22, p. 303-316, plates 22, 23.
1938. Annals of the Carnegie Museum, v. 27, p. 275-286, plates 28, 29.
1940. Annals of the Carnegie Museum, v. 28, p. 9-46, plates 1-7.
1941. Annals of the Carnegie Museum, v. 28, p. 323-340, plates 37, 38.
1942. Annals of the Carnegie Museum, v. 29, p. 241-270, plates 1-3.
1944. American midland naturalist, v. 32, p. 732-755, plates 1-4.
1946. Annals of the Carnegie Museum, v. 30, p. 110-212, plates 1-7.

GROBE, A. E.

1856. Dansk Naturhistorisk Forening Koberhavn Videnskabelige Meddelelser, p. 44-62.

HINDE, A. J.

1880. Quarterly journal of the Geological Society of London, v. 36, p. 368-378.
1882. Bihang till kongl. Svenska Akademiens Handlingar, v. 7, "N:05", p. 1-28, plates 1-3.

LANGE, F. W.

1947. Arquivos Musen Paranaense, v. 6, p. 161-230, plates 17-32.

STAUFFER, C. R.

1933. Bulletin of the Geological Society of America, v. 44, p. 1173-1218, plates 59-61.
1939. Journal of paleontology, v. 13, no. 5, p. 500-511, plates 57, 58.

TREADWELL, A. L.

1921. Carnegie Institution of Washington, v. 15, Publication 293, p. 1-131.

VERRILL, A. E.

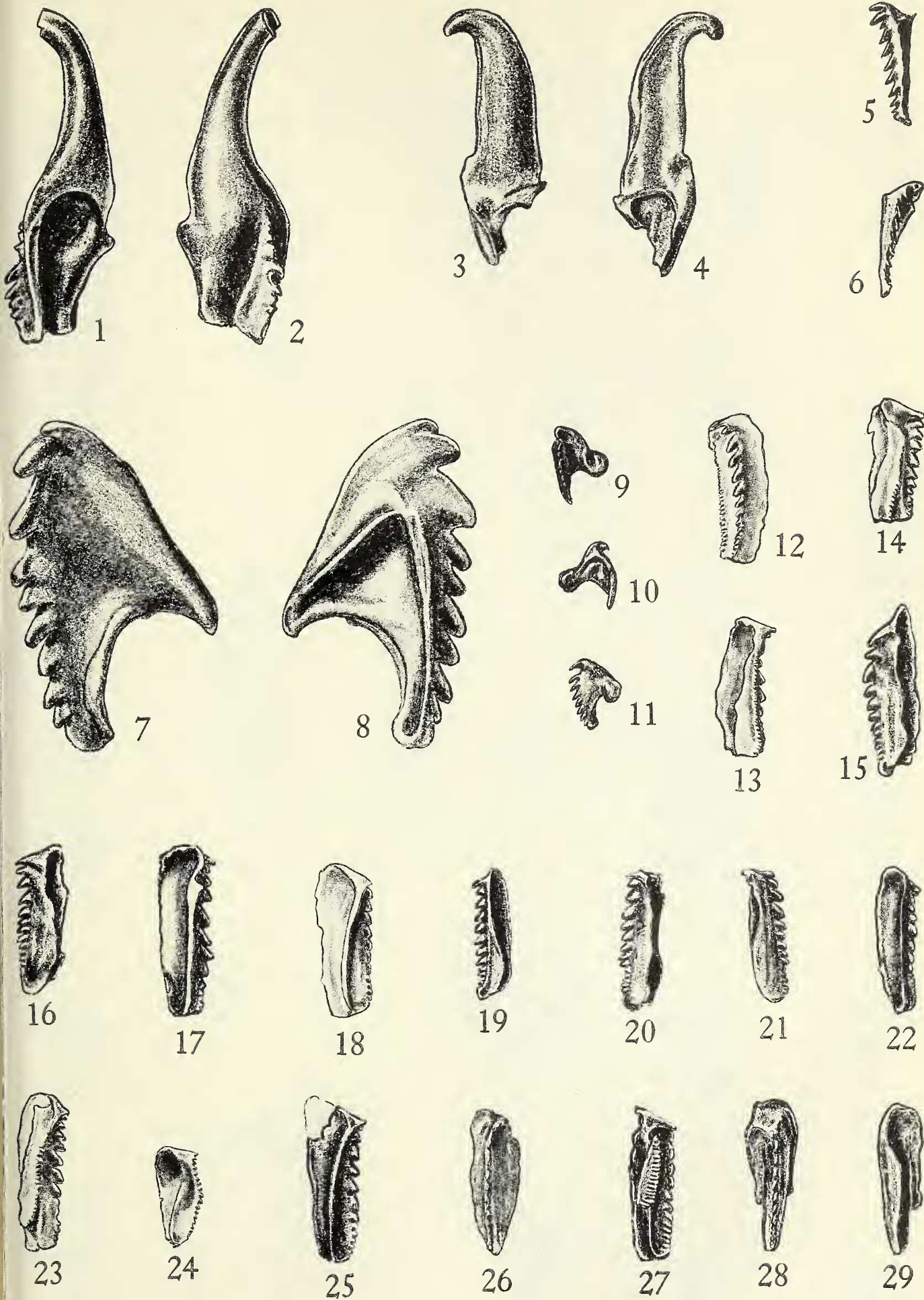
1900. Transactions of the Connecticut Academy of Arts and Sciences, v. 10, part 2, p. 595.

EXPLANATION OF PLATE 22

Figures magnified about 28 times

Numbers in parentheses indicate the Carnegie Museum catalogue numbers of the respective type specimens.

- FIG. 1-2. *Arabellites arrectus* sp. nov.
Maxilla I, right jaw (27862).
Fig. 1. Upper side.
Fig. 2. Under side.
- FIG. 3-4. *Nereidavus angulatus* (Eller)
Maxilla I, left jaw (27865).
Fig. 3. Under side.
Fig. 4. Upper side.
- FIG. 5-6. *Leodicites angiformis* sp. nov.
Maxilla II, right jaw (27869).
Fig. 5. Upper side.
Fig. 6. Under side
- FIG. 7-8. *Leodicites altilis* sp. nov.
Maxilla II, left jaw (27870).
Fig. 7. Under side.
Fig. 8. Upper side.
- FIG. 9-11. *Leodicites abbreviatus* sp. nov.
Maxilla II, left jaw (27873).
Fig. 9. Under side.
Fig. 10. Upper side.
Fig. 11. Side view.
- FIG. 12-13. *Staurocephalites aequilateralis* sp. nov.
Maxilla II, left jaw (27874).
Fig. 12. Under side.
Fig. 13. Upper side.
- FIG. 14. *Staurocephalites aequilateralis* sp. nov.
Maxilla II, left jaw (27877).
- FIG. 15. *Staurocephalites aequilateralis* sp. nov.
Maxilla II, right jaw (27878).
- FIG. 16. *Staurocephalites aequilateralis* sp. nov.
Maxilla II, right jaw (27882).
- FIG. 17. *Staurocephalites aequilateralis* sp. nov.
Maxilla II, left jaw (27888).
- FIG. 18. *Staurocephalites aequilateralis* sp. nov.
Maxilla, left jaw (27892).
- FIG. 19. *Staurocephalites aequilateralis* sp. nov.
Maxilla II, right jaw (27898).
- FIG. 20-21. *Staurocephalites aequilateralis* sp. nov.
Maxilla II, right jaw (27904).
Fig. 20. Upper side.
Fig. 21. Under side.
- FIG. 22. *Staurocephalites aequilateralis* sp. nov.
Maxilla II, left jaw (27910).
- FIG. 23. *Staurocephalites aequilateralis* sp. nov.
Maxilla II, left jaw (27916).
- FIG. 24. *Staurocephalites aequilateralis* sp. nov.
Maxilla III, left jaw (27917).
- FIG. 25. *Staurocephalites aequilateralis* sp. nov.
Maxilla II, left jaw (27918).
- FIG. 26. *Staurocephalites aequilateralis* sp. nov.
Maxilla II, left jaw (27924).
- FIG. 27-29. *Staurocephalites aequilateralis* sp. nov.
Maxilla II, left jaw (27926).
Fig. 27. Upper side.
Fig. 28. Under side.
Fig. 29. Side view.

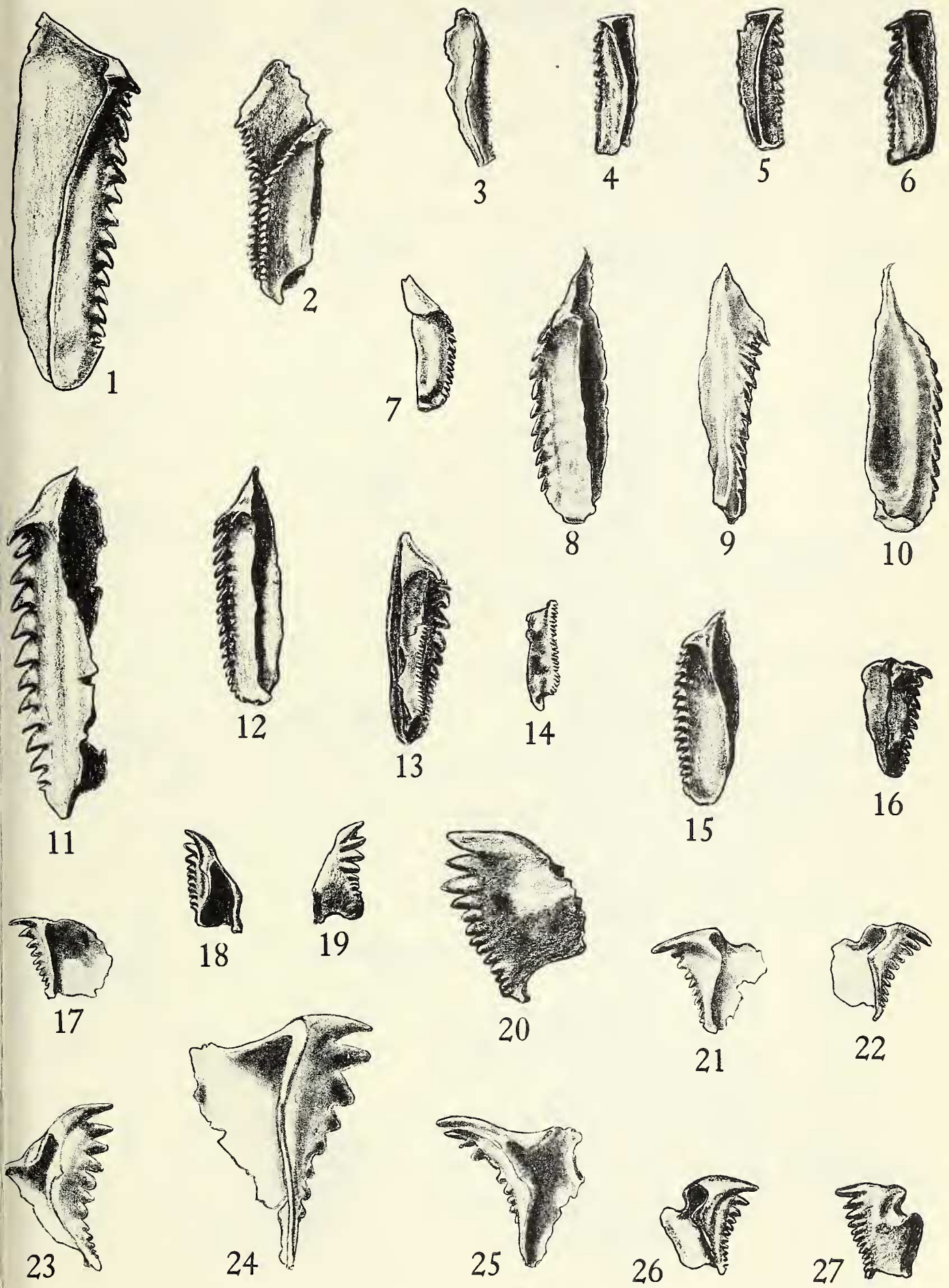


EXPLANATION OF PLATE 23

Figures magnified about 28 times

Numbers in parentheses indicate the Carnegie Museum catalogue numbers of the respective type specimens.

- FIG. 1. *Staurocephalites articulatus* sp. nov.
Maxilla II, left jaw (27783).
- FIG. 2. *Staurocephalites articulatus* sp. nov.
Maxilla II, III, left jaw (27784).
- FIG. 3. *Staurocephalites articulatus* sp. nov.
Maxilla III, left jaw (27785).
- FIG. 4. *Staurocephalites aequemarginalis* sp. nov.
Maxilla II, right jaw (27795).
- FIG. 5. *Staurocephalites aequemarginalis* sp. nov.
Maxilla II, left jaw (27796).
- FIG. 6. *Staurocephalites aequemarginalis* sp. nov.
Maxilla II, right jaw (27797).
- FIG. 7. *Staurocephalites articulatus* sp. nov.
Maxilla III, right jaw (27932).
- FIG. 8-10. *Staurocephalites alterostris* sp. nov.
Maxilla II, right jaw (27807).
Fig. 8. Upper side.
Fig. 9. Side view.
Fig. 10. Under side.
- FIG. 11. *Staurocephalites alterostris* sp. nov.
Maxilla II, right jaw (27808).
- FIG. 12. *Staurocephalites alterostris* sp. nov.
Maxilla II, right jaw (27809).
- FIG. 13-14. *Staurocephalites alterostris* sp. nov.
Maxilla II, III, left jaw (27810).
Fig. 13. Upper side.
Fig. 14. Maxilla III, upper side.
- FIG. 15. *Staurocephalites alterostris* sp. nov.
Maxilla II, right jaw (27811).
- FIG. 16. *Oenonites aequibrachiatus* sp. nov.
Maxilla II, left jaw (27926).
- FIG. 17. *Paleoenonites auctificus* sp. nov.
Maxilla II, right jaw (27828).
- FIG. 18-19. *Oenonites abscisus* sp. nov.
Maxilla I, right jaw (27827).
Fig. 18. Upper side.
Fig. 19. Under side.
- FIG. 20. *Paleoenonites angiportus* sp. nov.
Maxilla II, left jaw (27831).
- FIG. 21. *Paleoenonites angiportus* sp. nov.
Maxilla II, right jaw (27832).
- FIG. 22. *Paleoenonites angiportus* sp. nov.
Maxilla II, left jaw (27833).
- FIG. 23. *Paleoenonites armigerus* sp. nov.
Maxilla II, left jaw (27845).
- FIG. 24. *Paleoenonites alpenaensis* (Eller).
Maxilla II, left jaw (27853).
- FIG. 25. *Paleoenonites armigerus* sp. nov.
Maxilla II, right jaw (27846).
- FIG. 26-27. *Paleoenonites angiportus* sp. nov.
Maxilla II, left jaw (27834).
Fig. 26. Upper side.
Fig. 27. Under side.

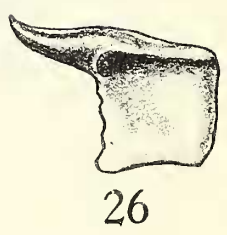
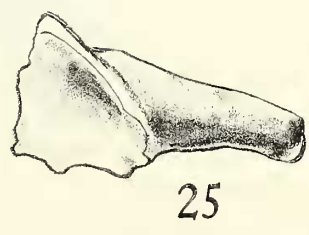
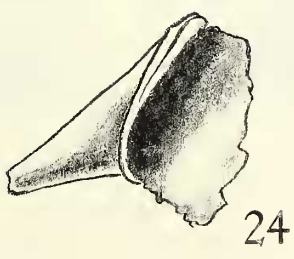
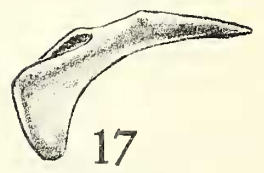
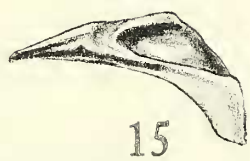
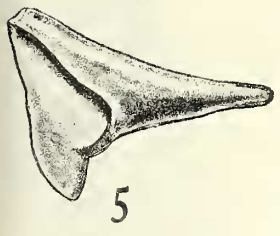
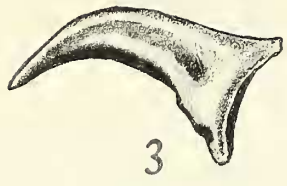
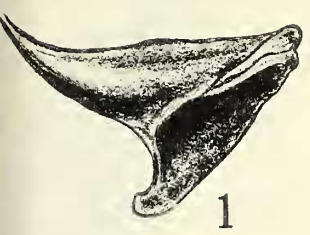


EXPLANATION OF PLATE 24

Figures magnified about 28 times

Numbers in parentheses indicate the Carnegie Museum catalogue numbers of the respective type specimens.

- FIG. 1. *Eunicites apicalis* sp. nov.
Maxilla IV, right jaw (27688).
- FIG. 2. *Eunicites adicus* sp. nov.
Maxilla IV or V, left jaw (27694).
- FIG. 3. *Eunicites alveolaris* sp. nov.
Maxilla IV or V, right jaw (27696).
- FIG. 4. *Eunicites asaphus* sp. nov.
Maxilla IV, right jaw (27699).
- FIG. 5. *Eunicites altidorsalis* sp. nov.
Maxilla IV, left jaw (27702).
- FIG. 6. *Eunicites acutirostris* sp. nov.
Maxilla V, left jaw (27704).
- FIG. 7. *Eunicites apidodus* sp. nov.
Maxilla V, left jaw (27711).
- FIG. 8. *Eunicites apidodus* sp. nov.
Maxilla V, left jaw (27712).
- FIG. 9. *Eunicites admirandus* sp. nov.
Maxilla IV or V, left jaw (27719).
- FIG. 10. *Eunicites anquisitus* sp. nov.
Maxilla IV or V, right jaw (27724).
- FIG. 11. *Eunicites anquisitus* sp. nov.
Maxilla IV or V, right jaw (27725).
- FIG. 12-13. *Eunicites acinaciformis* sp. nov.
Maxilla IV or V, right jaw (27726).
Fig. 12. Upper side.
Fig. 13. Under side.
- FIG. 14, 18. *Eunicites articulatus* sp. nov.
Maxilla IV, left jaw (27732).
Fig. 14. Upper side.
Fig. 18. Under side.
- FIG. 15. *Eunicites apiculatus* sp. nov.
Maxilla IV or V, right jaw (27737).
- FIG. 16. *Eunicites apiculatus* sp. nov.
Maxilla IV or V, left jaw (27738).
- FIG. 17. *Eunicites apiculatus* sp. nov.
Maxilla IV or V, left jaw (27739).
- FIG. 19. *Eunicites articulatus* sp. nov.
Maxilla IV or V, right jaw (27733).
- FIG. 20-21. *Eunicites articulatus* sp. nov.
Maxilla IV or V, right jaw (27734).
Fig. 20. Under side.
Fig. 21. Upper side.
- FIG. 22. *Eunicites acutulus* sp. nov.
Maxilla IV or V, left jaw (27743).
- FIG. 23. *Eunicites ambocoelius* sp. nov.
Maxilla IV or V, left jaw (27746).
- FIG. 24. *Eunicites conus* (Eller).
Maxilla IV or V, right jaw (27748).
- FIG. 25. *Eunicites conus* (Eller).
Maxilla IV or V, left jaw (27749).
- FIG. 26. *Eunicites axinus* sp. nov.
Maxilla IV or V, right jaw (27752).

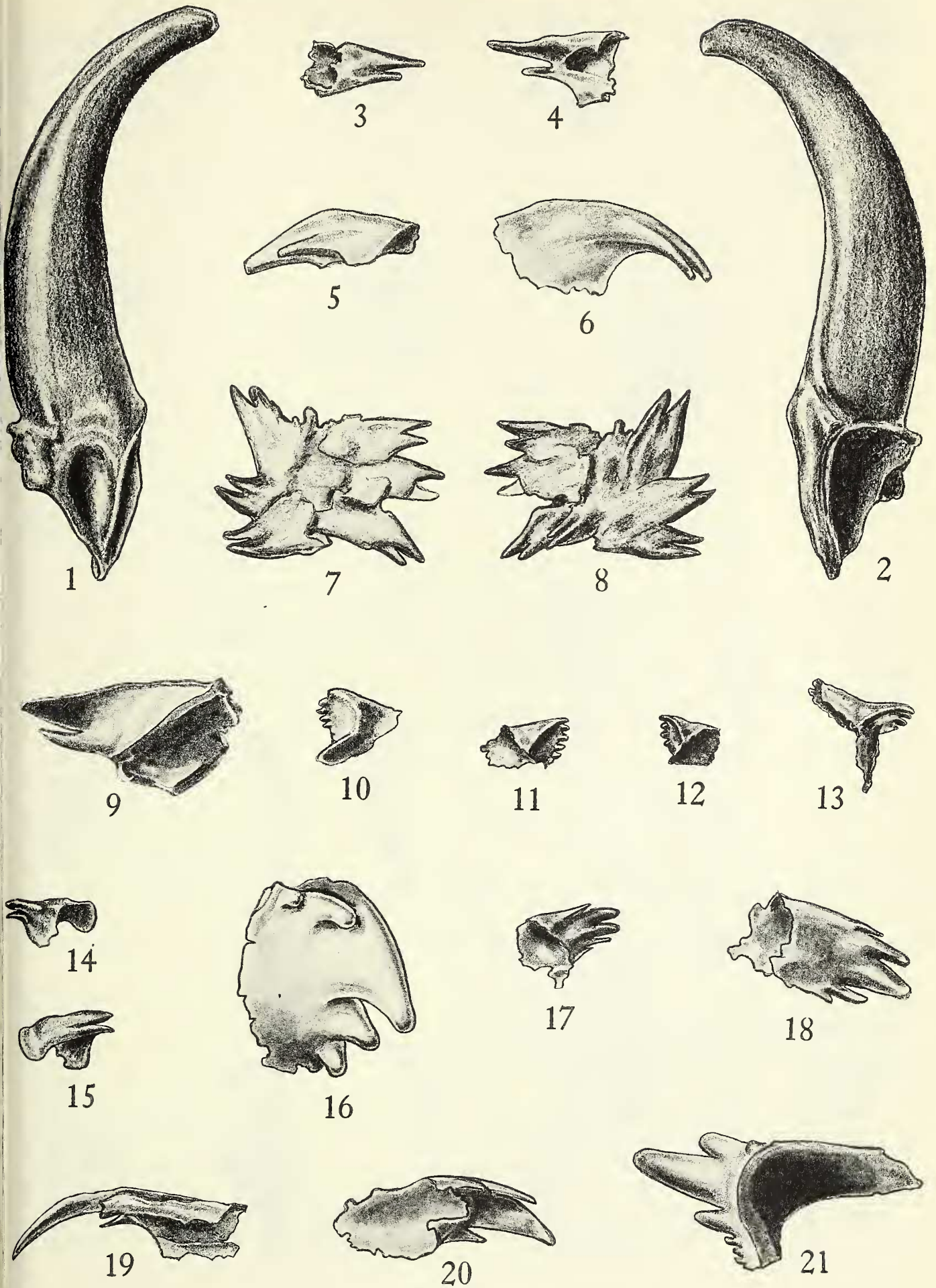


EXPLANATION OF PLATE 25

Figures magnified about 28 times

Numbers in parentheses indicate the Carnegie Museum catalogue numbers of the respective type specimens.

- FIG. 1-2. *Eunicites angulatus* Eller.
Maxilla I, right jaw (27756).
Fig. 1. Under side.
Fig. 2. Upper side.
- FIG. 3. *Ungulites acutidactylus* sp. nov.
Maxilla III, left jaw (27757).
- FIG. 4. *Ungulites acutidactylus* sp. nov.
Maxilla III, right jaw (27758).
- FIG. 5. *Ungulites arquatus* sp. nov.
Maxilla III, left jaw (27759).
- FIG. 6. *Ungulites arquatus* sp. nov.
Maxilla III, right jaw (27760).
- FIG. 7-8. *Ungulites agglomeratus* sp. nov.
Maxilla, obverse, reverse (27762).
- FIG. 9. *Ungulites agglomeratus* sp. nov.
Maxilla, right jaw (27763).
- FIG. 10. *Stauronereisites adversarius* sp. nov.
Maxilla III, right jaw (27765).
- FIG. 11. *Stauronereisites adversarius* sp. nov.
Maxilla III, left jaw (27766).
- FIG. 12. *Stauronereisites adversarius* sp. nov.
Maxilla III, right jaw (27767).
- FIG. 13. *Stauronereisites abditivus* sp. nov.
Maxilla III, left jaw (27768).
- FIG. 14-15. *Stauronereisites auriculatus* sp. nov.
Maxilla III, right jaw (27769).
Fig. 14. Upper side.
Fig. 15. Under side.
- FIG. 16. *Anisocerasites aspidodus* sp. nov.
Maxilla III, right jaw (27931).
- FIG. 17. *Anisocerasites acidentatus* sp. nov.
Maxilla III, left jaw (27772).
- FIG. 18. *Anisocerasites acidentatus* sp. nov.
Maxilla III, left jaw? (27773).
- FIG. 19. *Anisocerasites acanthophorus* sp. nov.
Maxilla III, right jaw (27776).
- FIG. 20. *Anisocerasites acanthophorus* sp. nov.
Maxilla III, left jaw (27777).
- FIG. 21. *Anisocerasites amplimarginatus* sp. nov.
Maxilla III, right jaw (27996).

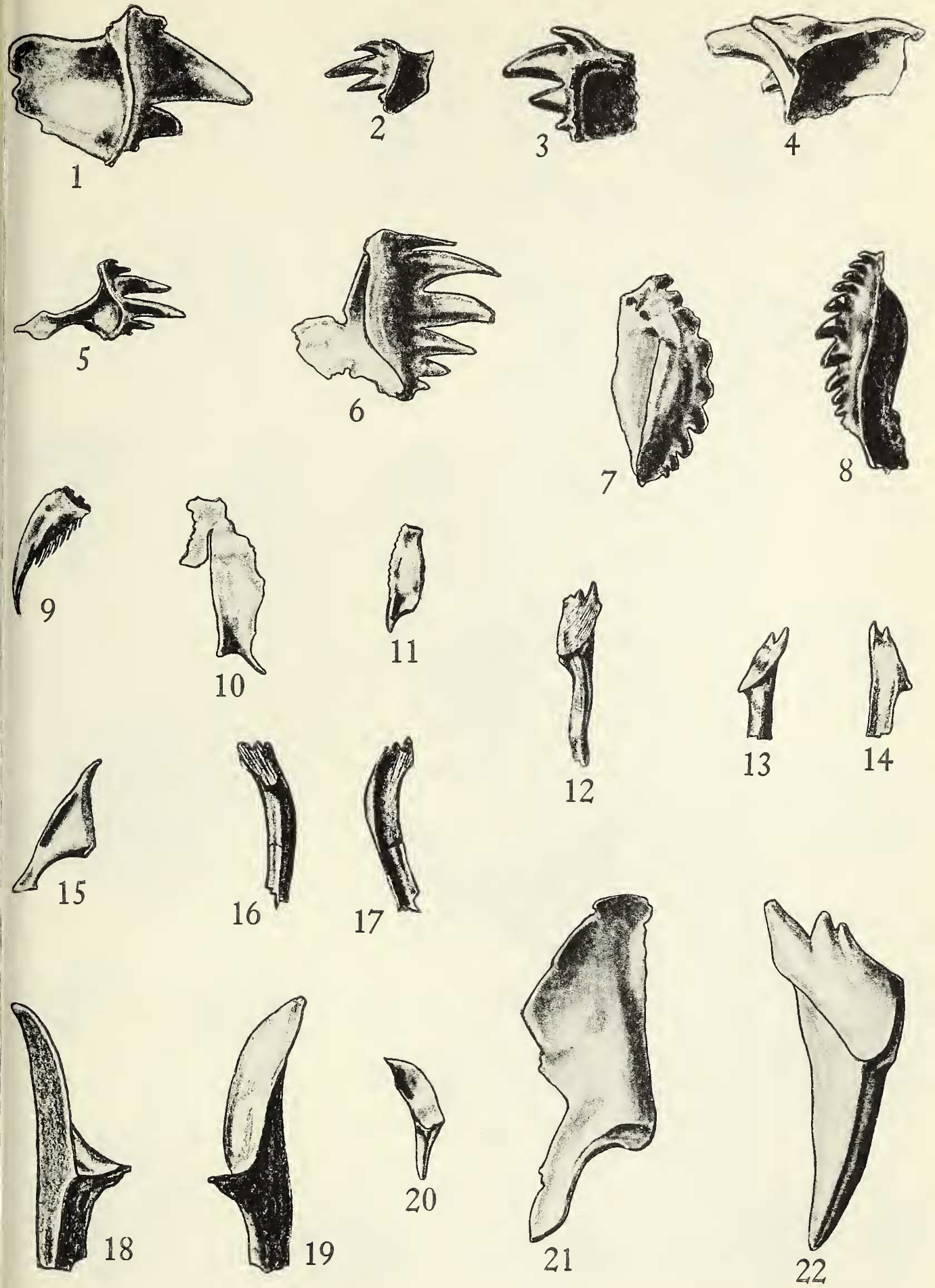


EXPLANATION OF PLATE 26

Figures magnified about 28 times

Numbers in parentheses indicate the Carnegie Museum catalogue numbers of the respective type specimens.

- FIG. 1. *Anisocerasites tanaodus* (Eller).
Maxilla, left jaw (27670).
- FIG. 2. *Anisocerasites tanaodus* (Eller).
Maxilla, right jaw (27671).
- FIG. 3. *Anisocerasites tanaodus* (Eller).
Maxilla, right jaw (27672).
- FIG. 4. *Anisocerasites tanaodus* (Eller).
Maxilla, right jaw (27673).
- FIG. 5. *Anisocerasites acicularis* sp. nov.
Maxilla, left jaw (27679).
- FIG. 6. *Anisocerasites acicularis* sp. nov.
Maxilla, left jaw (27680).
- FIG. 7. *Anisocerasites validus* (Eller).
Maxilla, left jaw (27681).
- FIG. 8. *Anisocerasites validus* (Eller).
Maxilla, right jaw (27682).
- FIG. 9. *Eunicites? alienus* sp. nov.
Maxilla? right jaw? (27683).
- FIG. 10. *Diopatraites asper* sp. nov.
Mandible, right shaft (27656).
- FIG. 11. *Diopatraites abruptus* sp. nov.
Mandible, left shaft (27654).
- FIG. 12. *Diopatraites arctostriatus* sp. nov.
Mandible, right shaft (27646).
- FIG. 13-14. *Diopatraites alveatus* sp. nov.
Mandible, right shaft (27653).
Fig. 13. Upper side.
Fig. 14. Under side.
- FIG. 15. *Diopatraites aequilaterus* sp. nov.
Mandible, left shaft (27645).
- FIG. 16-17. *Diopatraites arctostriatus* sp. nov.
Mandible, left shaft (27647).
Fig. 16. Upper side.
Fig. 17. Under side.
- FIG. 18-19. *Diopatraites aversus* sp. nov.
Mandible, right shaft (27659).
Fig. 18. Under side.
Fig. 19. Upper side.
- FIG. 20. *Diopatraites aversus* sp. nov.
Mandible, left shaft (27660).
- FIG. 21. *Diopatraites accommodus* sp. nov.
Mandible, left shaft (27641).
- FIG. 22. *Diopatraites conformis* Eller.
Mandible, left shaft (27667).

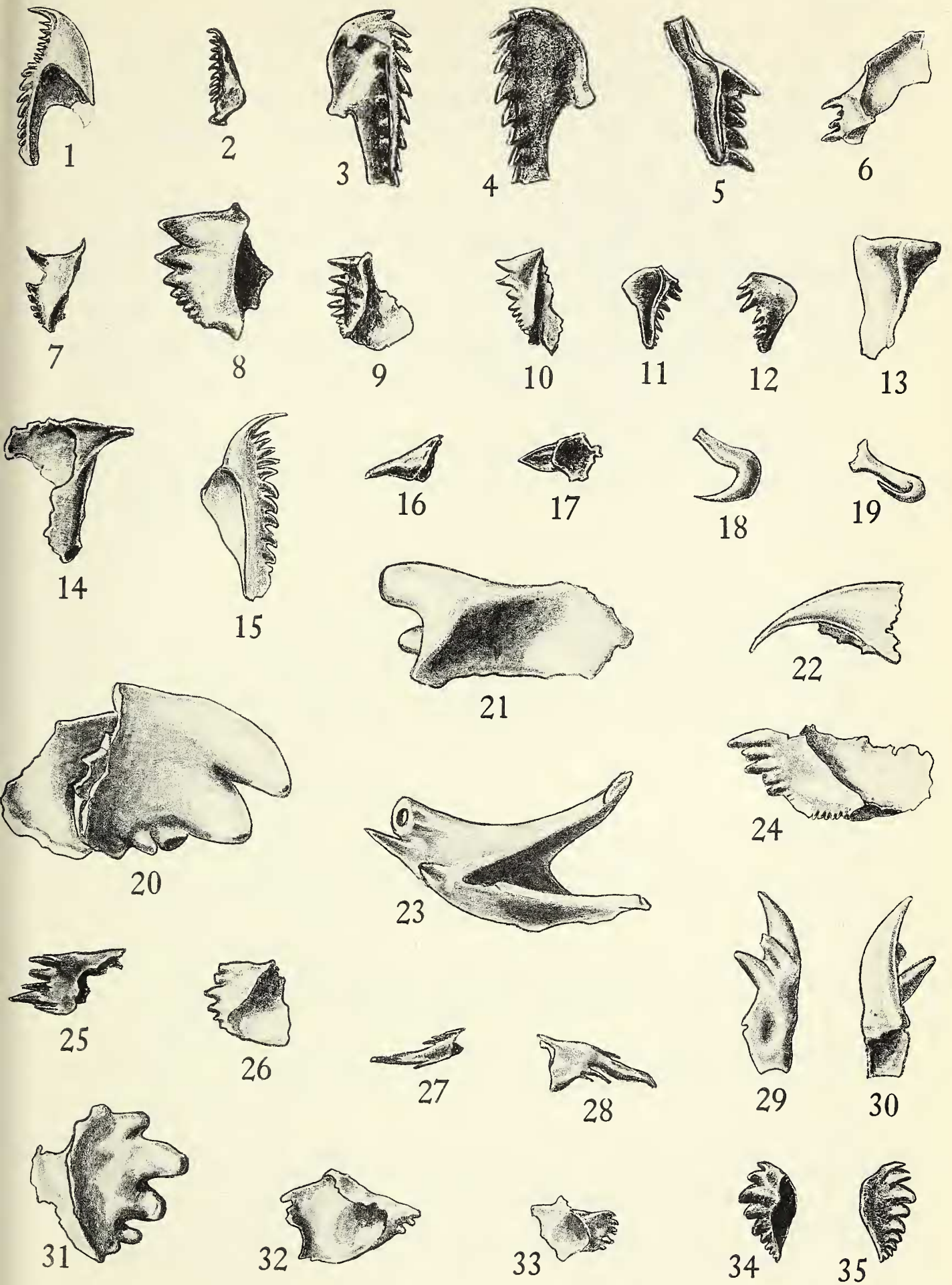


EXPLANATION OF PLATE 27

Figures magnified about 28 times

Numbers in parentheses indicate the Carnegie Museum catalogue numbers of the respective type specimens.

- FIG. 1. *Ildraites appressus* sp. nov.
Maxilla II, right jaw (27939).
- FIG. 2. *Nereidavus? admixtus* sp. nov.
Maxilla I, right jaw (27940).
- FIG. 3-4. *Leodicites amplicameratus* sp. nov.
Maxilla II, left jaw (27941).
Fig. 3. Upper side.
Fig. 4. Under side.
- FIG. 5. *Leodicites ambiguus* sp. nov.
Maxilla II, left jaw (27947).
- FIG. 6. *Leodicites ambiguus* sp. nov.
Maxilla, right jaw (27948).
- FIG. 7. *Leodicites angusticameratus* sp. nov.
Maxilla II, right jaw (27950).
- FIG. 8. *Paleoenonites andaculus* sp. nov.
Maxilla II, right jaw (27954).
- FIG. 9. *Paleoenonites andaculus* sp. nov.
Maxilla II, right jaw (27958).
- FIG. 10. *Paleoenonites andaculus* sp. nov.
Maxilla II, right jaw (27961).
- FIG. 11-12. *Paleoenonites arcuatellus* sp. nov.
Maxilla II, left jaw (27962).
Fig. 11. Upper side.
Fig. 12. Under side.
- FIG. 13. *Eunicites altinsculus* sp. nov.
Maxilla IV or V, left jaw (27965).
- FIG. 14. *Eunicites altinsculus* sp. nov.
Maxilla IV or V, left jaw (27966).
- FIG. 15. *Oenonites orthodontus?* Eller.
Maxilla I, left jaw (27933).
- FIG. 16-17. *Eunicites acidaspis* sp. nov.
Maxilla V, right jaw (27967).
Fig. 16. Side view.
Fig. 17. Upper side.
- FIG. 18-19. *Eunicites absonus* sp. nov.
Fig. 18. Side view.
Fig. 19. Under side.
- FIG. 20. *Ungulites astrictus* sp. nov.
Maxilla III, left jaw (27969).
- FIG. 21. *Ungulites auctus* sp. nov.
Maxilla III, right jaw (27970).
- FIG. 22. *Eunicites asaphus* sp. nov.
Maxilla IV, right jaw (27974).
- FIG. 23. *Ungulites* sp. indet.
Maxilla II, right jaw? (27972).
- FIG. 24. *Ungulites* sp. indet.
Maxilla III, right jaw (27973).
- FIG. 25. *Anisocerasites aciedentatus* sp. nov.
Maxilla III, right jaw (27975).
- FIG. 26. *Anisocerasites aciedentatus* sp. nov.
Maxilla III, right jaw (27976).



- FIG. 27. *Anisocerasites acanthophorus* sp. nov.
Maxilla III, right jaw (27977).
- FIG. 28. *Anisocerasites acanthophorus* sp. nov.
Maxilla III, left jaw (27978).
- FIG. 29-30. *Ungulites alicornis* sp. nov.
Maxilla II, left jaw (27980).
Fig. 29. Under side.
Fig. 30. Upper side.
- FIG. 31. *Anisocerasites aspedodus* sp. nov.
Maxilla III, left jaw (27982).
- FIG. 32. *Ungulites attenuatus* sp. nov.
Maxilla IV, left jaw (27983).
- FIG. 33. *Stauronereisites aequalis* sp. nov.
Maxilla, left jaw (27991).
- FIG. 34-35. *Anisocerasites validus* (Eller).
Maxilla II, right jaw (27984).
Fig. 34. Upper side.
Fig. 35. Under side.